

To: Examiner Everett White  
Art Unit 1623  
Facsimile: (703) 746-5093

From: Paul Serbinowski

Re: PROPOSED CLAIMS FOR U.S. S.N. 09/831,419  
UNOFFICIAL/ DO NOT ENTER

For 10/16/03 Telephone Interview

Date: October 15, 2003

Three Pages Including Cover Sheet: Proposed Claims and Associate Power of Attorney

---

THE INFORMATION IN THIS FACSIMILE TRANSMISSION IS CONFIDENTIAL. IF  
YOU ARE NOT THE ADDRESSEE, PLEASE DO NOT DESTROY IT AND NOTIFY THE  
SENDER. UNAUTHORIZED USE OF THE INFORMATION HEREIN IS STRICTLY  
PROHIBITED

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Yura Hifofumi et al.

Serial No.: 09/831,419

Group Art Unit: 1623

Filed: 08/13/2001

Examiner: Everett White

Title: FUNCTIONAL CHITOSAN DERIVATIVE

Docket: 33550

Pearne & Gordon LLP  
Ohio Savings Plaza  
1801 East 9<sup>th</sup> St.  
Suite 1200  
Cleveland, OH 44114-3108  
Telephone: (216) 579-1700  
Facsimile: (216) 579-6073  
[Email:ip@pearnegordon.com](mailto:Email:ip@pearnegordon.com)

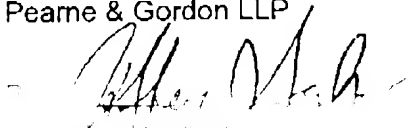
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## ASSOCIATE POWER OF ATTORNEY

The undersigned, duly appointed principal attorney in the matter of the above-identified application hereby appoints Paul A. Serbinowski, Reg. No. 34429 associate attorney with full power in the premises, to prosecute this application, to make alterations and amendments therein, and to transact business in the U.S. Patent and Trademark Office connected therewith.

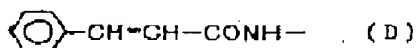
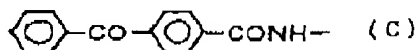
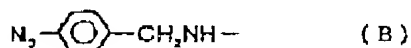
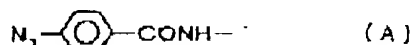
It is requested that all further correspondence in the matter of the application continue to be addressed directly to said principal attorney.

Respectfully submitted,  
Pearne & Gordon LLP

  
attorney for  
Reg. No. 27070

# PROPOSED CLAIMS: UNOFFICIAL, DO NOT ENTER

24. A functional chitosan derivative characterized by being formed by incorporating to an at least partially deacetylated chitin/chitosan at least one photo-reactive functional group selected from the following (A)-(D) and equivalents thereof:



and being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan.

25. A health-care material comprising a functional chitosan derivative as recited in claim 24.

27. The functional chitosan derivative of claim 24 characterized by being formed by incorporating to said at least partially deacetylated chitin/chitosan at least one additional functional group selected from:

- a carbohydrate having a reducing terminal selected from lactose, maltose, melibiose, cellobiose, laminaribiose and mannobiose and equivalents thereof and being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan;
- an amphipathic group being incorporated to an amino group at the 2-position of a glucosamine unit constituting said chitin/chitosan or a hydroxyl group at the 3-position or 6-position of a glucosamine unit or an acetylglucosamine unit constituting said chitin/chitosan; and